

# Experience to understand: designing a methodology for understanding kitchen interactions

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## ABSTRACT

The following paper presents a methodology for user engagement into the interaction design process. It focuses on the group of middle-age, middle class mothers, housewives and individuals leading a busy life between work and family and their interaction with home, especially kitchen appliances. The methodology was developed to gain insight and achieve greater understanding of users in question. An ongoing study research with the described methodology is also presented.

## Keywords

**Interaction design, ethnography, user research, user experience design, kitchen heroes**

## INTRODUCTION

In the last decade, and especially in the last years, we are witnessing a significant design trend that is pushing producers of home appliances to come up with new, technologically advanced and even more importantly, (visual) design-centered products. Kitchen, as one of the vital places in every home is no exception. Companies are hiring renowned artists and industrial designers (eg. Ora Ito, Karim Rashid) looking for designs that would satisfy demands and expectations of its users (customers). The collaboration results in aesthetical products, pleasing to the eye and a true addition in a designer-savvy's kitchen. Technology wise, there is a significant trend of touch interfaces and trend of "smart" appliances. Smart usually means intelligence and autonomy through sensors, buttons and functions that (try to) interact with other devices and the user. Ovens suitable for total cooking beginners and refrigerators that monitor stored food and have integrated iPod dock and speakers are nowadays available on the market.

There is nothing wrong with nicer looking and more intelligent kitchen. However there is a fear that the user experience (UX) could be suffering and could be designed better. Kitchen appliances have the potential to be better

connected into an intelligent ubiquitous system being part of a modern human-centered home. Yet it seems like designers and producers keep forgetting who their users are and what their expectations and goals are.

Our goal, is to bring focus back to the actual user, and to propose a methodology that leads towards better understanding of users. In our study, we focus mainly on interactions happening in the kitchen as we believe kitchen appliances are poorly designed because of misassumptions about priorities, the role of aesthetics and new features over usability.

## Introducing kitchen heroes

In year 2007 a new label arose for trend-setting mothers, who lead a busy life, successfully leading a family and a career. A graphic designer and mom Constance Van Flandem labelled herself and her kin as the *alpha moms*. They are the tech-savvy, well educated perfectionists who utilize modern technology to tackle their busy schedules [1]. Alpha moms seem to be the target group for most companies developing anything connected with home appliances, including kitchen. However the user group who actually uses kitchen appliances the most are so called *kitchen heroes*. Kitchen heroes are average (mostly middle age) individuals leading a busy life between work and family. They represent the silent and almost never complaining majority of users using kitchen appliances on daily basis. This user group includes not only moms and housewives, but also home-staying parents and others. They may not be well educated, but are used to work, taking care of the family and all the domestic work.

The interaction designers' aim in this research is to address their needs and goals and include them in the interaction design process. Kitchen heroes in focus of the research study rarely complain about any piece of technology at home. Saffer (2007) talks about how humans have an amazing tendency to become accustomed to the inconvenient, even awkward. Kitchen heroes are used to make compromises, to adapt to technology as well as adapt

technology to their needs. For example, they use only a portion of functions embedded in a product. Most importantly they seek functionality over good user experience. No matter all the technological innovation and design trends, *kitchen heroes*' lives have not been made easier, or at least so appears. There are numerous reasons that should be identified and addressed with proper interaction design.

### **Mind your users**

Interaction design as a process should commence immediately after the decision to introduce a new or redesign an existing product or service is made. Technological determinism [5], as called in theory could be avoided that way. The term describes technology as an independent force in societal development and a theory that describes users adopting to technology, which does not go well with interaction design principles which (should be) are user-oriented.

It seems though, that the previously defined user group of kitchen heroes is not recognized as significant. Especially when compared to other user groups, for example the elderly, people with disabilities or tech-savvy users that get more attention from the academia as well as the corporates. The intention of this study is to raise an awareness of the importance of knowing your user. A decade or so ago, adding more functions to a product represented added value. Nowadays company mindsets fortunately changed, and there is a trend of simplicity, which was and still is on the rise. While simplicity and emphasis on the core functionality is good, there are some approaches and technologies that could be overestimated. One example is the now almost ubiquitous touch functionality. Middle age, "average" [1] users in general are known not to be widely fond of touch interfaces, no matter how intuitive they ought to be. They are not digital natives and they needed years to adapt to certain technologies, which helped shaping their mental models [4]. Switching to touch and gestural interfaces for example, could prove as a painful experience.

Companies argue there are usability studies and research done to ensure they stay on the right track with development and innovation for a better user experience. While usability tests with users are essential, there are still some concerns. The first concern is connected with the selected user group. Namely there is a possibility to miss-define the user group. Even when the appropriate user group is used, it should be approached very thoughtful to gain honest feedback. As those humble people lead a life of constant compromises and work, they don't feel like the ones who should complain about bad usability. Second concern is connected to the core interaction design. Why only test high fidelity prototypes and finished products, when users could be involved in the design process from the beginning on.

## **THE RESEARCH STUDY: EXPERIENCE TO UNDERSTAND**

The research question in this research study is *how to connect existing devices and how to (re)design them into a ubiquitous system that could be utilized by the vast majority of people, with the focus on previously defined kitchen heroes?* People using kitchen appliances regularly participated in the user study. One of the greatest challenges was how to get them to open up towards the researcher and provide true and valuable feedback.

### **Methodology**

Methodology for the previously stated research question was developed in the study. It is based on previous experience and knowledge gained while working with different user groups (usability studies and user-driven interaction design sessions) and on research done by other authors [9] [10].

Honest, critical input regarding user goals, intentions, wishes and expectations was needed. It was found out that any formal enquiries and usability tests don't work well with the typical users of this research. Observing and shadowing users was the first step for developing the actual research method.

The methodology aims to understand the user behaviour and mental models. It is based on ethnography [8], which derives from anthropology. Instead of asking the user group to point out frustrations and suggest improvements, suggested methodology seems fairly passive. The core method could be divided into three parts:

- Observation
- Participation
- Understanding

The first phase is based on observation of users in their homes and during their everyday activities. Cooking is, unlike watching television or surfing the Internet, significantly bound to cultural background. It is connected with various emotions, traditions, cultures, routines, etc. It is an activity that differs from nation to nation, even from family to family. Observation outside testing labs in users' natural environment is crucial when researchers and designers are to design for a good user experience.

Observation is followed by participation in activities together with users, such as shopping for grocery and cooking. Participation is also a step towards gaining trust of users involved, which is identified as an important element in our methodology. Active participation is a method often used in ethnography, especially when studying specific user groups connected through a certain interest. Cooking and domestic work might seem trivial, yet it needs more attention from designers and developers as well as researchers in order to design intelligent ubiquitous systems in service of its users.

Active participation and observation combined are key to understanding kitchen heroes. By tapping into everyday life of users and further on by participating with them,

interaction designer (also researcher) participates in a shared experience. With shared experience true understanding of user goals is possible. Understanding, the final part of proposed methodology, is achieved when designers or researchers involved in the process analyze all the information gathered while interacting with the selected group of users. Understanding guides designers, helps them design products that adapt to appropriate mental models and results in better user experience.

The developed methodology is a combination of different research methods and its dependence on ethnography also introduces same traps. With active participation and engagement in activities, researcher could put objectivity on stake and fails to see the problem as a whole. Suggested methodology focuses on gaining insight and involve users in early phases of interaction design.

For research to be successful it was figured at least two researchers should be present in every session. While participating and engaging with the users, one researcher is involved actively in activities, while the other takes the role of the observer. Still, it is important that the latter is not too passive or acts as a judge or evaluator. S/he should not take notes if not necessary. The analysis happens right after every session when both (all) researchers participate. Researchers switch their roles in each session if possible. Every researcher also leads their own diary.

#### Experimental study and further work

The proposed methodology is used in an ongoing research that tends to help interaction designers involve, even integrate users in the design process. First phase of the study started at the time of writing this paper. The main focus is on before mentioned kitchen heroes. Semi-closed groups, for example cooking classes, are approached, which enable researchers' pristine engagement with users.

Seven women and three men aged between 35 and 55 all middle-class people, using kitchen appliances on a daily basis, were asked for permission to allow researchers to accompany them in part of their everyday activities. In the first part of the research the methodology wasn't explicate to the involved participants. Instead of that, the goal of the ongoing research was explained: to better understand how they operate during their kitchen activities. Participants were surprised with the study goal, as they are not used to be asked about such "trivial" tasks. In the first two meetings broader topic of home appliances and personal information technology (mobile phones, cameras) was touched. It was quickly found out that participants involved were more open and talkative when backed up by other people in similar position. Two of them were part of a joint shopping. Researchers' intention was to experience on what basis the shopping choices are made and how are they connected with kitchen appliances at home.

Now that interaction and collaboration with participants involved in research started, it is planned to continue with the proposed methodology. After the initial observation process is finished, the researchers involved must elaborate

on the information and knowledge gained during the first phase. Based on that insight the second phase is planned, where various decisions will be made: how to engage further with the peer community, in which activities and to what extend should researchers participate.

Future work involves regular sessions (once per week) with the selected peer group and regular assessment sessions among researchers. Researchers' intent is to stay open to the peer community for suggestions. Therefore, a more loose, action research approach, where sessions with users are less formal and extremely activity-centered is preferred. Such approach aims for more active participation, eventually leading to participatory design sessions and user-driven innovation process. The research goal remains: to involve those who use kitchen appliances in a fruitful collaborative process, which would result in a model that helps interaction designers and UX architects.

#### CONCLUSION

Methodology for involving the users in the design process for products was developed and presented in this paper. The developed methodology is a combination of different research methods and techniques and its' dependence on ethnography[8]. It is consisted of three basic parts: observation, active participation and understanding users. The aim of the proposed methodology should answer the research question *how to connect existing devices and how to (re)design them into a ubiquitous system that could be utilized by the vast majority of people, with the focus on kitchen heroes?* Ongoing research that uses the proposed methodology is as well presented in the paper.

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